



# PHIN Recommended Vocabulary

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Sundak Ganesan, M.D.

SAIC Consultant to CDC/IRMO

Contributors: David Dobbs, Mamie Bell



# Overview



## □ Background

- Basics of vocabulary
- Medical & Non-medical vocabularies
- Vocabulary related standard organizations
- Consolidated Health Informatics (CHI)
- Public Health Vocabulary Gap

## □ PHIN Vocabulary Services

- PHIN Vocabulary Domains
- PHIN Recommended Value Sets
- Tools

# Basics: Concept, Code, Coding System

Concept + Code + Coding System + Version

## ❑ Example: Grocery Industry

- ❑ Concept: Diet Coke, 3 liter bottle
  - ❑ Code: UPC **04900** 01134
  - ❑ Coding System: Uniform Coding Council
  - ❑ Coding System Version: UPC Version A
- 
- ❑ **Code Systems** are important sources of the standard vocabulary needed for consistent, readily-comprehensible data exchanges between information systems (Example: LOINC, SNOMED)
- 
- ❑ UPC: Acronym for Universal Product Code; the bar code symbol that is the standard in the retail marketplace. It uniquely identifies a product and the manufacturer.





# Basics: Standard Vocabulary

- ❑ **Standard Vocabulary** refers to agreed-upon terminology and codes used to represent concepts, such as terms and codes for disease and environmental conditions, laboratory tests, microorganisms.

## Basics: Value Set

- ❑ A **Value Set** is a subset of terms and codes drawn from a code system and designed to meet a specified data requirement
- ❑ Examples:
  - Fruit Basket (*Apples + Oranges + Pineapples + Chocolates + Apple Cider + Nuts*)
  - Specimen Source (*Tap water + Urine midstream + Contact lens + Kidney stone*)

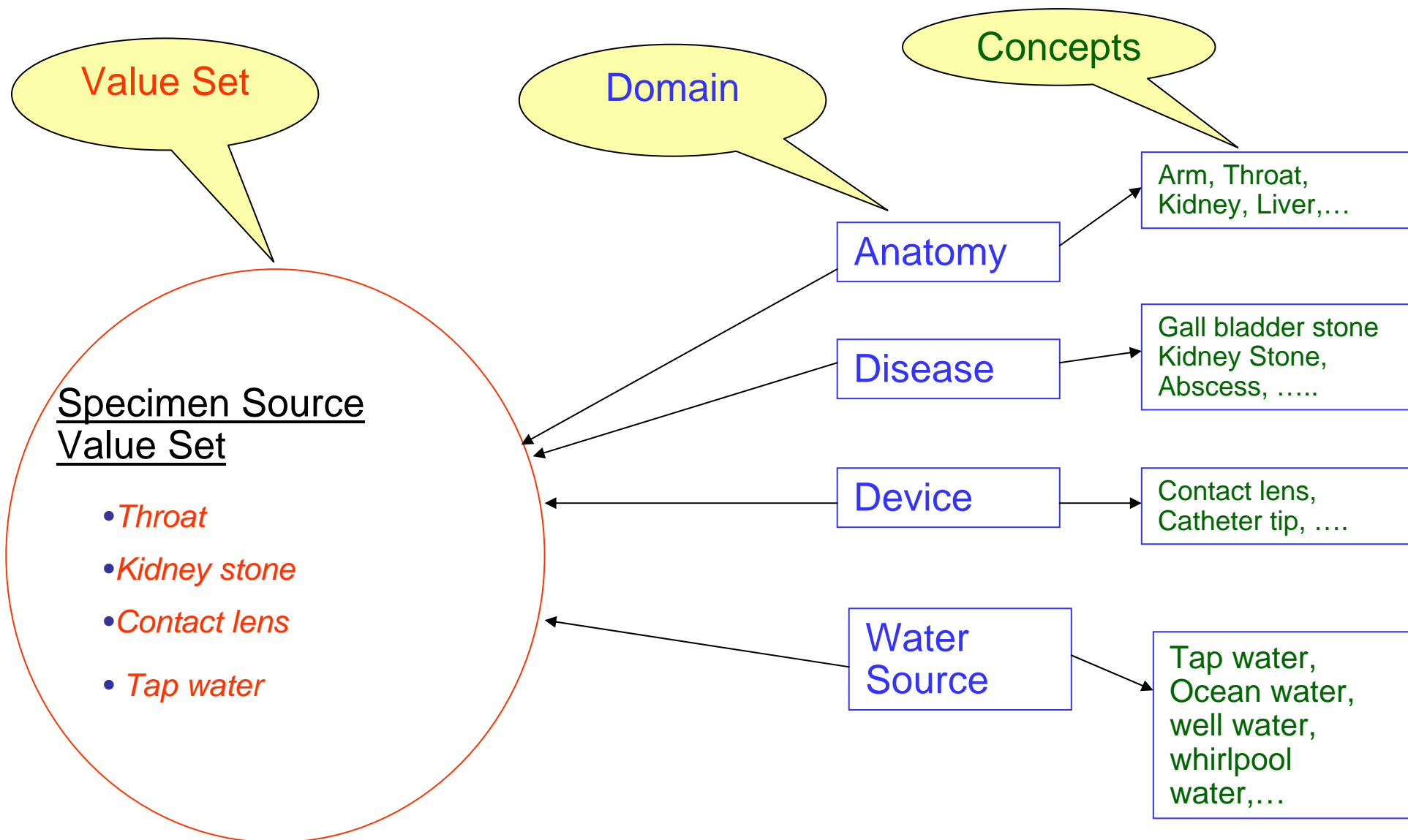




# Basics: Vocabulary Domain

- ❑ A **Vocabulary Domain** is a semantic categorization of related terms
- ❑ Examples:
  - Fruits: Apples, Grapes, Oranges
  - Water Source: Tap water, Well water, Ocean water, Whirlpool water
  - Disease : Kidney Stone, Gall bladder stone
  - Device: Contact lens, Pacemaker, Urine catheter tip

# Relationship between Value set and Vocabulary Domain



# Vocabulary Domains and Value Set

Property	Value Set	Vocabulary Domain
<b>Example</b>	Specimen Source <input type="checkbox"/> Tap Water <input type="checkbox"/> Kidney Stone <input type="checkbox"/> Contact lens <input type="checkbox"/> Midstream Urine	(1) Water Source (2) Disease (3) Device (4) Condition
<b>Hierarchy</b>	Flat list of terms. No relationship between the terms	(a) "is a" relationship (definition) (b) Inheritance (c) Decision Support
<b>Usage</b>	(a) <u>Messaging</u> : Binding to a coding system via use of a value set (b) <u>Applications</u> : Pick list (selective list of terms displayed as responses to a question)	(a) Source for creating a value set (b) Reports (c) Data Analysis (d) Knowledge
<b>Impact of updates (addition &amp; deletions of terms)</b>	Additions and deletions of terms to a value set could impact application and messaging.	Additions and deletions of terms to a vocabulary domain could impact reports and decision support.





# Public Health Vocabulary: Medical and Non-medical Vocabularies



- ❑ Public Health Vocabulary:
  - Medical Vocabularies
  - Non-Medical Vocabularies

# Medical Vocabularies

- ❑ UMLS<sup>1</sup> Grouping of Medical Vocabularies<sup>2</sup>:
  - (1) Classifying (generalizing) clinical data for billing/statistical reporting  
E.g. ICD-9, CPT, HCPCS
  - (2) Representing clinically specific data  
E.g. SNOMED CT, LOINC, RxNORM, UMDNS
  - (3) Indexing or synthesizing knowledge-based information  
E.g. MeSH, NCI Thesaurus, NCBI Taxonomy
- ❑ 1. NLM produces and distributes the UMLS Knowledge Sources (databases) and associated software tools (programs) for use by system developers in building or enhancing electronic information systems that create, process, retrieve, integrate, and/or aggregate biomedical and health data and information, as well as in informatics research.
- ❑ 2. Complete list of UMLS medical vocabularies are available in the appendix.

# Non-Medical Vocabularies

- ❑ Industry
  - North American Standards Industry Classification Standard ([NAICS](#))
  - Standard Industry Classification ([SIC](#))
- ❑ Occupation
  - Standards Occupational Classification ([SOC](#))
- ❑ Demographic Location
  - Federal Information Processing Standards ([FIPS](#))
    - County, City, States, Metropolitan and Country codes
  - United States Postal Service ([USPS](#))
    - Zip Codes
- ❑ Manufactured Items (retail market)
  - Universal Coding Council ([UCC](#))
    - Universal Product Code ([UPC](#)) Codes

# Standards

## ❑ Health Informatics Standards

- International Standards Organization ([ISO](#))
  - Health Information and Communication Technology ([ISO/TC 215](#))
- American National Standards Institute ([ANSI](#))
  - Digital Imaging and Communications in Medicine ([DICOM](#))
  - The Accredited Standards Committee ([ASC X12](#))
  - American Society of Testing and Materials ([ASTM](#))
  - National Council for Prescription Drug Programs ([NCPDP](#))
  - Health Level Seven ([HL7](#))

## ❑ Standard for Metadata Registries: [ISO-11179](#)

## ❑ Terminology Services Standard: The HL7 Common Terminology ([HL7 CTS](#)) Services represents a set of interfaces for querying and accessing terminological data.



# Consolidated Health Informatics (CHI)



Powering America's future with technology.

## Presidential Initiatives

### Consolidated Health Informatics

Federal Enterprise  
Architecture

Information Policy

Presidential Initiatives

Government to Citizen •

Government to •  
Business

Government to •  
Government

Internal Efficiency & •  
Effectiveness

E-Authentication •

CIO Council

Adopts a portfolio of existing health information interoperability standards (health vocabulary and messaging) enabling all agencies in the federal health enterprise to “speak the same language” based on common enterprise-wide business and information technology architectures.

# CHI Domains

## Standards announced by CHI:

Anatomy
Billing / Financial
Chemicals
Clinical Encounters
Demographics
Diagnosis and Problem List
Genes and Proteins
Immunizations
Interventions & Procedures
Laboratory Test Order Names
Laboratory Result Names
Interventions and Procedures, non-Laboratory
Laboratory Result Contents
Units
Nursing
Text Based Reports
Medications
Messaging

## CHI Phase II: Standards Pending

Disability
History and Physical
Medical Devices and Supplies
Multimedia
Population Health



# CHI Federal Partner Departments & Agencies (Nov 2003)



- ☐ Veterans Affairs: Veterans Health Administration
- ☐ U.S. Department of Defense
- ☐ Health and Human Services
  - Office of the Secretary, Centers for Medicare & Medicaid Services, [Centers for Disease Control & Prevention](#), National Institutes of Health, National Library of Medicine, Agency for Health Research and Quality, Health Resources & Services Administration, etc..
- ☐ Office of Management & Budget
- ☐ Environmental Protection Agency
- ☐ National Institute of Standards & Technology
- ☐ For the complete list, please visit the CHI website at:  
<http://www.whitehouse.gov/omb/egov/c-3-6-chi.html>



# CHI Domain Recommendation Reports



- ☐ CHI Domain Full report has three parts:
  - **Part I – Sub-team & Domain Scope Identification** – basic information defining the team and the scope of its investigation.
  - **Part II – Standards Adoption Recommendation** – team-based advice on standard(s) to adopt.
  - **Part III – Adoption & Deployment Information** – supporting information gathered to assist with deployment of the standard (may be partial).
  
- ☐ CHI Domain Executive Summary is a one page summary report for each CHI domain.
  
- ☐ Download the CHI Domain reports from the website:
  - <http://www.whitehouse.gov/omb/egov/c-3-6-chi.html>



## “Combination of existing vocabularies has considerably better coverage than any single vocabulary”

### ❑ NLM & AHCPR: Large Scale Vocabulary Test<sup>1</sup>

#### ❑ Method:

- Using UMLS Knowledge Source Server, participants searched the more than 30 vocabularies in the 1996 UMLS Metathesaurus and three planned additions to determine if concepts for which they desired controlled terminology were present or absent.

#### ❑ Results:

- Based on preliminary data and analysis, individual vocabularies contained <1% to 63% of the terms and <1% to 54% of the concepts. Only *SNOMED International* and the *Read Codes* had more than 60% of the terms and more than 50% of the concepts.

#### ❑ Conclusion:

- The combination of existing controlled vocabularies included in the test represents the meanings of the majority of the terminology needed to record patient conditions, providing substantially more exact matches than any individual vocabulary in the set.

1. Evaluating the Coverage of Controlled Health Data Terminologies Report on the Results of the NLM/AHCPR Large Scale Vocabulary Test Betsy L. Humphreys, MLS, Alexa T. McCray, PhD, and May L. Cheh, MS , [J Am Med Inform Assoc. 1997 Nov-Dec; 4\(6\): 484–500](#)



## CDC Thesaurus Finding: Public Health Gap

### ❑ Concepts

- Largest proportion of the concept deficit falls in the areas of:
  - Occupational Health and Safety
  - Environmental Health
  - Injury Prevention & Safety
  - Organisms / Organism-related Diseases
  - Bioterrorism and Preparedness Response

### ❑ Context

- Concept may be present in a standard biomedical vocabulary, but its public health context may not
  - *Bacillus anthracis* as organism, but not as a bioterrorism agent



## PHIN Vocabulary Services

- PHIN Vocabulary Domains
- PHIN Recommended Value sets

# Overview of PHIN Vocabulary Domains

## □ PHIN vocabulary domains:















- Draw concepts from CHI recommended vocabulary.
  - Demographics (HL7)
  - Lab Tests (LOINC)
  - Lab Results (SNOMED)
- Also include domains that are of interest to public health, which were not covered by CHI.
  - E.g. “Occupation” domain draws the concepts & codes from “Standard Occupational Classification (SOC)”
- Pending CHI recommendation domains:
  - E.g. Population Health, Medical devices, Disability, Food



## Purpose of the PHIN Vocabulary Domains

- ❑ Simplify the selection of vocabulary standard choices for PHIN programs and projects
- ❑ Enable PHIN program and project to consistently identify appropriate vocabulary standards for their coded concept
  - Vocabulary Registration & Reconciliation (R & R) Process: A CDC internal process to ensure that PHIN applications are using proper vocabulary.
- ❑ This enables semantically accurate exchange of information across the PHIN

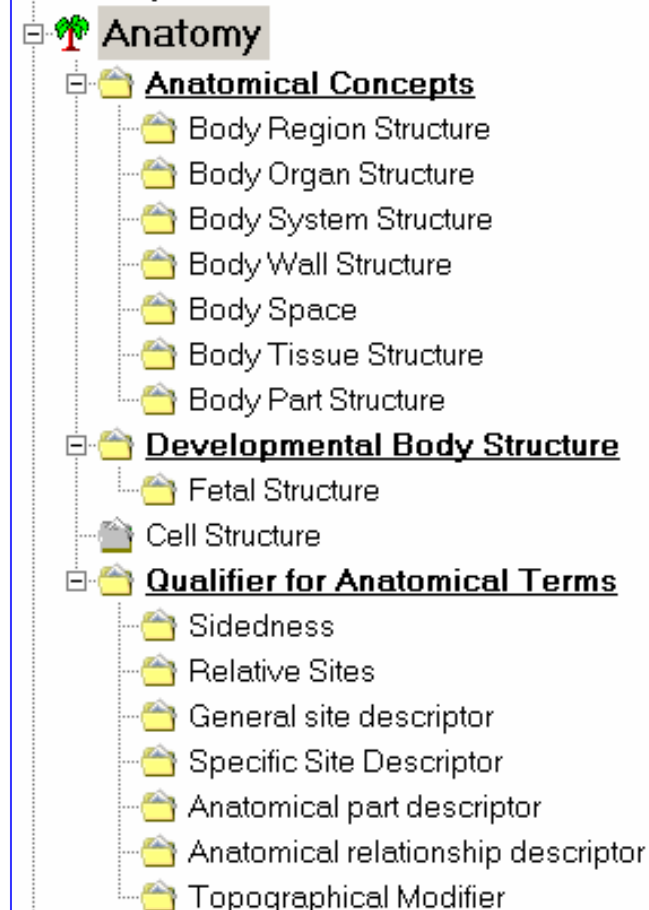
# PHIN Vocabulary Domains

- ☐  **PHIN Vocabulary Domains**
- ☐  **Demographics**
- ☐  **Clinical Encounters**
- ☐  **Immunizations**
- ☐  **Interventions & Procedures: Laboratory Test Order Names**
- ☐  **Laboratory Result Names**
- ☐  **Laboratory Result Contents**
- ☐  **Anatomy**
- ☐  **Injury**
- ☐  **Diagnosis and Problem List**
- ☐  **Interventions & Procedures: Non-Laboratory**
- ☐  **Medications**
- ☐  **Chemicals**
- ☐  **Genes & Proteins**
- ☐  **Modifier And/Or Qualifier**
- ☐  **Population Health**
- ☐  **Substance**
- ☐  **Medical Devices and Supplies**
- ☐  **Disability**
- ☐  **Text Based Reports**
- ☐  **History & Physical**

# PHIN Vocabulary Hierarchy

- ❑ PHIN vocabulary domain follows the CHI domain scope.
- ❑ PHIN vocabulary concepts would inherit the semantics from the coding system associated with the PHIN vocabulary domain.
- ❑ PHIN vocabulary hierarchy is relatively flat, so that users could easily navigate and identify the sub-domains.

## Example: PHIN Anatomy domain hierarchy



# Demographics

Demographics

- Name Prefix
- Name Suffix
- Name Type
- Address Type
- Gender
- Age Groups
- Marital Status
- Language
- Educational Level
- Educational Degree
- Employee Job Class
- Race
- Ethnicity
- Religion
- Relationship (Next of Kin)
- Zip Codes
- County Codes
- City Codes
- Metropolitan Area Codes
- Country Codes
- Country Subdivision Codes
- United States State Codes
- Telecommunication Equipment Type Code
- Insurance Status

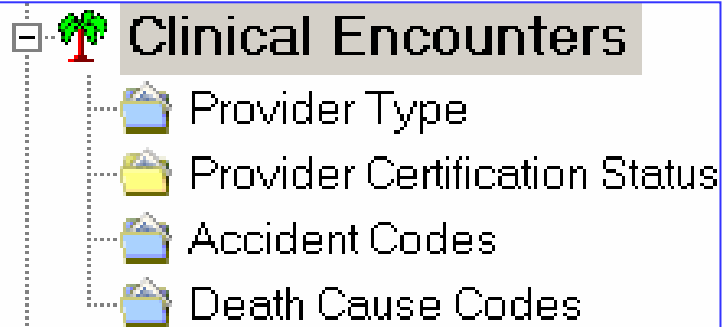
CHI Recommendation: HL7

Hyperlink: [CHI Full Report](#)

Sub-domain	Standard
Age Groups	MeSH
Language	ISO 639-2
Race	CDC Race & Ethnicity
Ethnicity	CDC Race & Ethnicity
Zip Codes	United States Postal Service (USPS)
County, City, Metropolitan, U.S. State Codes	Federal Information Publishing Standard (FIPS)
Country	ISO 3166-1
Country Sub-division	ISO 3166-2



# Clinical Encounters




CHI Recommendation: HL7 Value Sets



Hyperlink: [CHI Full Report](#)

Sub-domain	Standard
Provider Type	Pending (HIPPA Provider Taxonomy)
Accident Codes	ICD-9 E
Death Cause Codes	ICD 10

# Immunizations



## Immunizations

-  CVX - Vaccines Administered
-  MVX - Manufacturers of Vaccines

CHI Recommendation: HL7 (CDC maintained CVX & MVX codes)

Hyperlink: [CHI Full Report](#)



Sub-domain	Standard
Vaccines Administered	CDC (NIP)
Manufacturers of Vaccine	CDC (NIP)

NIP – National Immunization Program



# Interventions & Procedures: Laboratory Test Order Names





Interventions & Procedures: Laboratory Test Order Names

Lab LOINC Classes

CHI Recommendation: LOINC

Hyperlink: [CHI Full Report](#)

# Laboratory Result Names



## Laboratory Result Names





















Lab LOINC Classes

CHI Recommendation: LOINC

Hyperlink: [CHI Full Report](#)

# Laboratory Result Contents

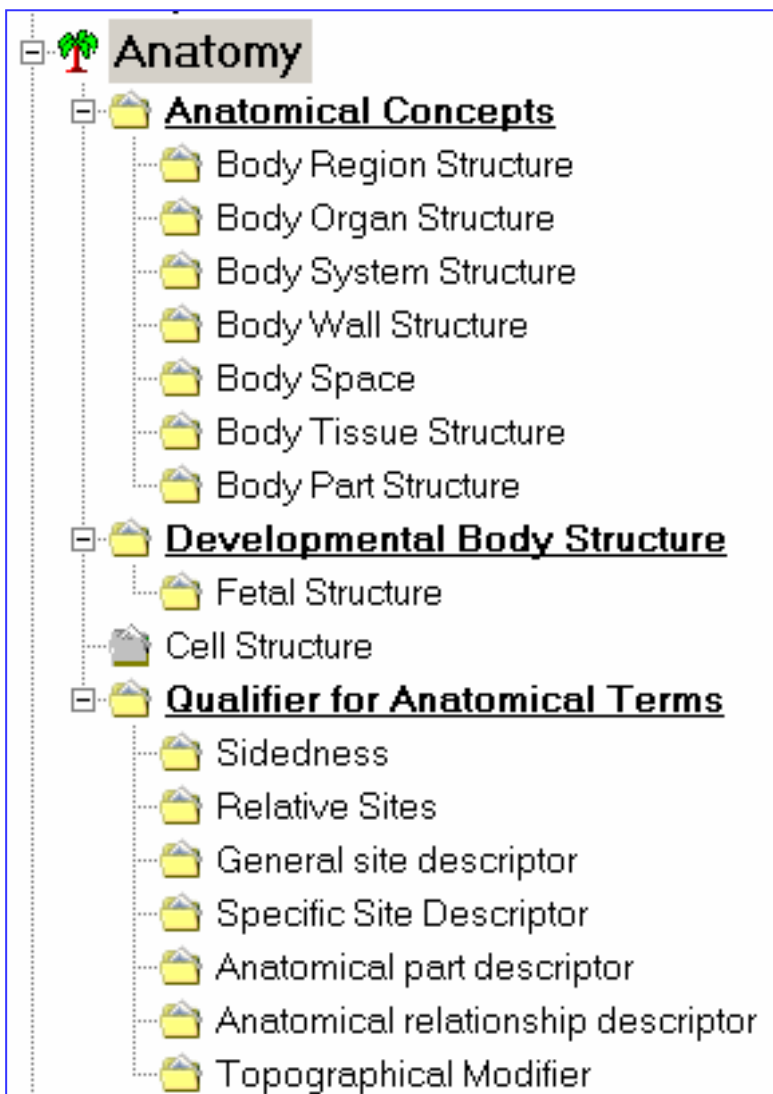
- [-]  **Laboratory Result Contents**
  -  **Laboratory Test Results (findings)**
  - [+]  **Microorganism**
  -  **General Laboratory Result Comments**
  - [-]  **Laboratory Result (Non-Human Content)**
    -  Animal
    -  Plant
    - [-]  **Environmental Samples**
      -  Air
      -  Water
      -  Storage containers
      -  Manufacturing Sites
      -  Radiation
  -  **Hematology Result Codes**
  -  **Immunohematology / Blood Bank result codes**
  - [+]  **Anatomic Pathology Reporting Codes**
  -  **Specimen**
  -  **Specimen Collection**

**CHI Recommendation: SNOMED CT**

**Hyperlink: [CHI Full Report](#)**

Sub-domain	Standard
Environmental Samples	Pending (EPA)
Units	HL7® derived from ISO 2955–83 and ANSI X3.50.

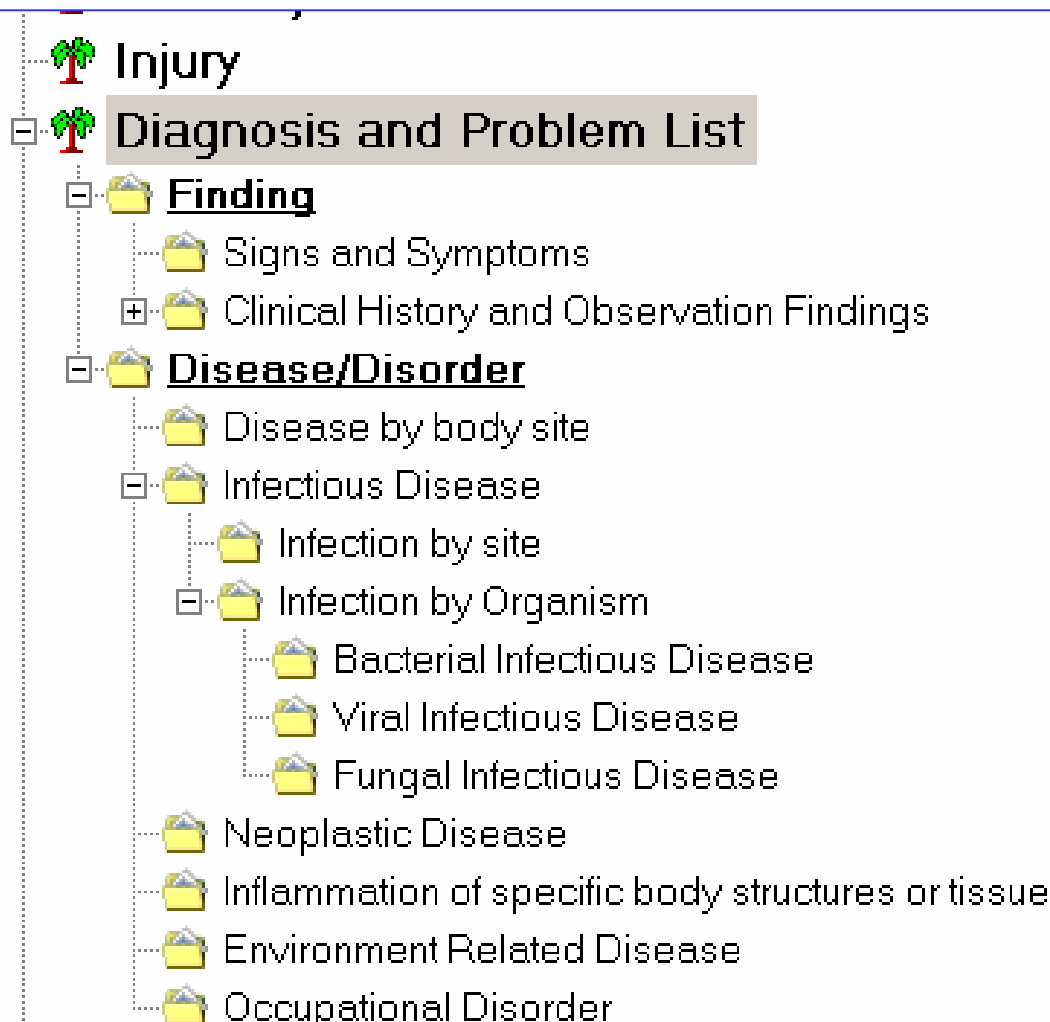
# Anatomy



CHI Recommendation: SNOMED CT & NCI Thesaurus (Cell Structure)

Hyperlink: [CHI Full Report](#)

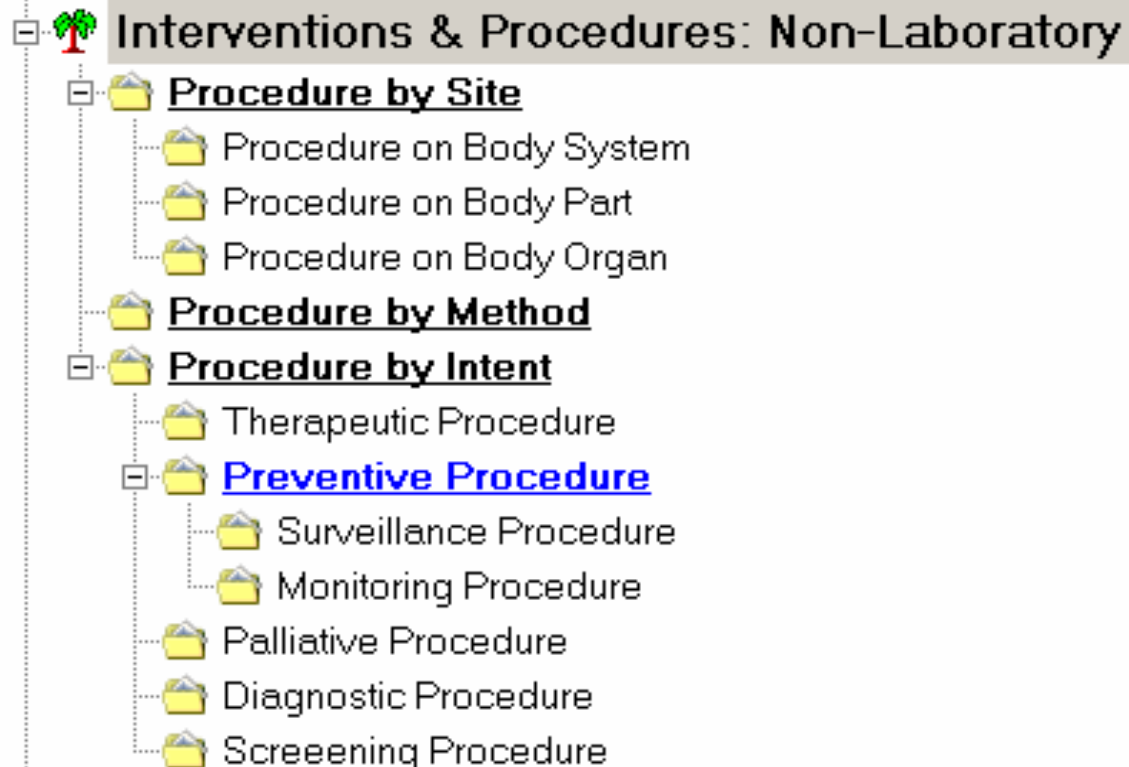
# Diagnosis and Problem List



CHI Recommendation: SNOMED CT

Hyperlink: [CHI Full Report](#)

# Interventions & Procedures: Non-Laboratory



CHI Recommendation: SNOMED CT

Hyperlink: [CHI Full Report](#)



# Medications

## CHI Recommendation:

Sub-domain		Standard
Medications: Drug Classification	<a href="#">CHI Report</a>	VA's National Drug File Reference Terminology (NDF-RT)
Medications: Structured Product Labeling Sections	<a href="#">CHI Report</a>	LOINC <sup>®</sup> Clinical SPL section terminology
Medications: Drug Product	<a href="#">CHI Report</a>	FDA's National Drug Code (NDC)
Medications: Package	<a href="#">CHI Report</a>	FDA/CDER Data Standards Manual
Medications: Active Ingredients	<a href="#">CHI Report</a>	FDA Established Name for active ingredient & FDA Unique Ingredient Identifier (UNII) codes.
Medications: Clinical Drug	<a href="#">CHI Report</a>	UMLS Semantic Clinical Drug (SCD) of RxNorm
Medications: Manufactured Dosage Form	<a href="#">CHI Report</a>	FDA/CDER Data Standards Manual



# Chemicals

## SCOPE

To provide codes for chemicals of importance to health care outside of medications, which were covered in the CHI Medication standard.

CHI Recommendation: Substance Registry System

Hyperlink: [CHI Full Report](#)

The Substance Registry System (SRS) is the Environmental Protection Agency's (EPA) central system for information about regulated and monitored substances.



# Genes & Proteins

## SCOPE

To allow the federal health care sector to exchange information regarding the role of genes in biomedical research and healthcare, using a single unambiguous genetic nomenclature.

CHI Recommendation: Human Gene Nomenclature (HUGN) for genes. None for proteins

Hyperlink: [CHI Full Report](#)

# PHIN Domain: Modifier And/or Qualifier

Sub-domain	Standard	Comments / Examples
Units of Measure (qualifier)	HL7® derived from ISO 2955–83 and ANSI X3.50	?? <b>UCUM</b> . E.g. mg, mg/dl, week, meq/kg, mg/day, gram (creatinine)
Presence Findings (qualifier)	SNOMED CT	e.g. Positive, Present, Seen, Detected, +, +++
Absence Findings (qualifier)	SNOMED CT	e.g. Absent, Negative, Not isolated, not seen, none
Normality Findings (qualifier]	SNOMED CT	e.g. Normal, Abnormal, Borderline normal
Additional Values (qualfier)	SNOMED CT	e.g. Alphanumerics, Greek Letters, Numbers, alphabets
Degree Findings (qualifier)	SNOMED CT	e.g. Small, increase, high, significant
General Adjectival modifier	SNOMED CT	e.g. Soft, Rare, Malignant, Thick
Time Frame (qualifier)	SNOMED CT	e.g. Morning, 12 hours, daily, weekly, infrequent
Time patterns (qualifier)	SNOMED CT	e.g. Acute, recurrent, hospital-acquired, tertiary

# Population Health

Population Health

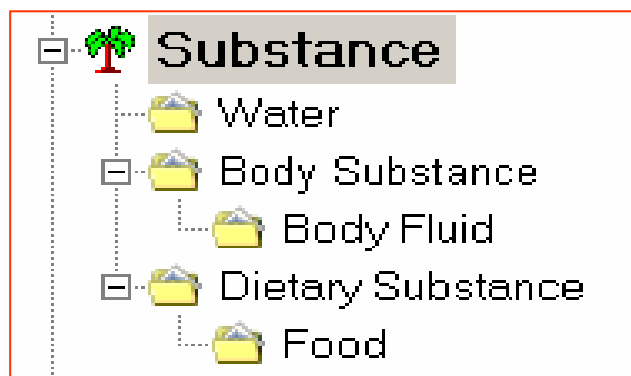
- Public Health Reporting
- Population Health Statistics
- Public Health Case Transmission Mode
- Public Health Case Notification Types
- Public Health Case Confirmation Methods
- Occupation
- Industry

CHI Recommendation: Pending

Hyperlink: [CHI Full Report](#)

Sub-domain	Standard
Occupation	Standard Occupational Classification (SOC)
Industry	North American Industry Classification System (NAICS)

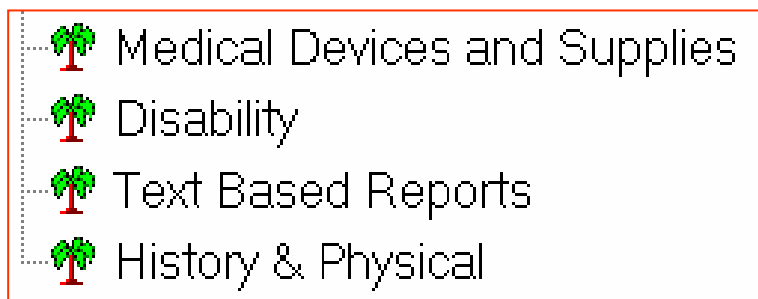
# Pending Domain Recommendations



Water: USGS / EPA  
 Body Substance: SNOMED CT  
 Dietary Substance: FDA/USDA  
 Plant: FDA /USDA  
 Animals: SNOMED CT



Public Health: CDC+NCI+FDA..



Devices: GMDN, UMDNS, FDA  
 Disability: ICF, SNOMED CT, UMLS  
 Text Based Reports: HL7+LOINC  
 History & Physical: SNOMED CT



# PHIN Vocabulary Domain Information (metadata)



PHIN Vocabulary Domains are described by four sections:

1) PHIN Domain Information

- *Id, Descriptions, Keywords, Comments*

2) CHI related Information

- *Hyperlink to CHI domain recommendation document*

3) PHIN Recommended Coding System Information

- *Code system, Code system's Domain Reference, Hyperlink*

4) Enumeration of the concepts / sub-domains from the recommended coding system

- List of concepts and descriptions without the concept codes (*illustration purpose only*). Concept codes are not available in this document to avoid the copyright issues.



## PHIN Vocabulary Domain Information

- ☐ PHIN recommended vocabulary domain document contains a reference into the primary coding system from which concepts should be drawn. Hyperlinks to applicable vocabulary standards are provided for most of the PHIN vocabulary domains.
- ☐ PHIN recommended vocabulary domain document also contain a sample list of concepts / sub-categories.
- ☐ PHIN recommended vocabulary domain document is available in the following formats:
  - Microsoft HELP file format (CHM)
  - PDF
  - Word Document
- ☐ Demo of the PHIN Domain Finder





## PHIN Recommended Value Sets

# Example: Specimen Source related Value Sets

Value Set	Value Set Concepts
<b>Specimen Source - National Immunization Program (NIP)</b>	Blood Cerebrospinal fluid Nasopharyngeal <b>Other</b> Throat Urine
<b>Specimen Source - Neonatal</b>	Whole blood Cerebral spinal fluid <b>Placenta</b> Other Unknown
<b>Specimen Source for Streptococcus</b>	Blood CSF <b>Other normally sterile site</b>
<b>Specimen Source - HL7</b>	HL7 value set for specimen source (100 concepts)

Value Set	Value Set Concepts
<b>Specimen Source for Rubella Virus</b>	Blood Cerebro spinal fluid Nasopharyngeal Throat Urine
<b>Specimen Source - Congenital Rubella Syndrome</b>	Blood <b>Cataract</b> Cerebrospinal fluid Nasopharyngeal Other Throat Urine



# PHIN Recommended Value Sets

## ☐ CDC Standard Value Sets

- E.g. Race, Ethnicity, Nationally Notifiable Diseases 2005, Vaccines Administered(CVX), Manufacturer of Vaccines (MVX)

## ☐ HL7 Value Sets

- Messaging related technical value sets.
  - E.g. “Code System”
- Demographics related value sets
  - E.g. Name type, Address type, Marital status
- CHI Recommended HL7 Value sets related to “Clinical Encounters”
  - E.g. Organization Unit Type, Provider Role, Event type
  - E.g. “Accident Code” HL7 data element uses “ICD-9 E” codes

## ☐ Value sets that are commonly used by PHIN programs and applications

- E.g. “Yes No” Value set, “Positive Negative Unknown” Value set, “Weight Units”.

## PHIN Recommended Value Set Concepts

- ❑ PHIN recommended value sets draw concepts from PHIN recommended vocabulary.
  - Each PHIN recommended value set is associated with a primary code system and, potentially, secondary code systems, if primary code system needs to be extended.
  - Primary code system refers to the PHIN vocabulary domain's code system (vocabulary source).
  - The concepts from secondary code system (CDC PHIN) will in most instances be submitted to the vocabulary domain's primary coding system organization.



# PHIN Recommended Value Sets in PHIN VADS



<b>Value Set</b>	<b>Coding System</b>
Name Type	HL7
Address Type	HL7
Gender	HL7
Marital Status	HL7
Relationship	HL7
Race Category	CDC
Ethnicity Group	CDC
Race	CDC
Ethnicity	CDC
Educational Level	HL7
Educational Degree	HL7
Age Units	HL7 / ISO
Weight Units	HL7 / ISO

# PHIN Recommended Value Sets in PHIN VADS (contd.)


Value Set	Coding System
Temperature Units	HL7 / ISO
Pregnancy Trimester	SNOMED CT
Nationally Notifiable Diseases (2005)	CDC
Vaccines Administered (CVX)	CDC
Vaccine Manufacturers (MVX)	CDC
Observation Interpretation Susceptibility	HL7
Specimen Condition	HL7
Specimen Reject Reason	HL7
Result Status	HL7
Yes No (YN)	HL7
Positive Negative Unknown (PNU)	SNOMED CT
True False (TF)	SNOMED CT



## PHIN Vocabulary Services (PHIN VS) Team



### Contact Information:

- ❑ Mamie J. Bell, MLn  
CDC/IRMO  
[Mamie.bell@cdc.gov](mailto:Mamie.bell@cdc.gov)
- ❑ David Dobbs,   
SAIC Consultant to CDC/IRMO  
[ddobbs@cdc.gov](mailto:ddobbs@cdc.gov)
- ❑ Sundak Ganesan, M.D.  
SAIC Consultant to CDC/IRMO  
[sganesan@cdc.gov](mailto:sganesan@cdc.gov)
- ❑ PHIN VS Website: [www.cdc.gov/phn/vocabulary](http://www.cdc.gov/phn/vocabulary)



## Appendix

-UMLS Grouping of medical vocabularies



# Medical Vocabularies -UMLS Grouping (1)

- Classifying (generalizing) clinical data for billing/statistical reporting

Diagnoses and procedures	
ICD9CM_2005	International Classification of Diseases: 9th Revision, Clinical Modification (ICD-9-CM_2005)
Diagnoses only	
DSM4_1994	Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)
ICD10 etc	International Statistical Classification of Diseases and Related Health Problems: 10th Revision (ICD-
Procedures only	
ALT2004	Alternative Billing Concepts (AltLink)
CDT5	Current Dental Terminology (CDT) contained in HCPCS
CPT2005	Physicians' Current Procedural Terminology (CPT). 4th ed.
HCDT5	HCPCS Version of Current Dental Terminology
HCPCS05	Healthcare Financing Administration Common Procedure Coding System (HCPCS)
HCPT05	HCPCS Version of Current Procedural Terminology (CPT)

# Medical Vocabularies -UMLS Grouping (2)

## □ Representing clinically specific data

"Comprehensive" clinical vocabularies	
RCD99 etc	National Health Service Clinical Terms Version 3 (Read Codes)
SNOMEDCT_2004_07_31	Systematized Nomenclature of Medicine - Clinical Terms (plus two older editions of CHI)
Observations and tests	
LNC213	Logical Observation Identifiers, Names and Codes (LOINC)
CHI	
ULT93	Ultrasound Structure Attribute Reporting (UltraSTAR)
Procedures	
PPAC98	Pharmacy Practice Activity Classification
Diagnoses/Clinical problems/signs and symptoms	
BI98	Beth Israel OMR Clinical Problem List Vocabulary
CCPSS99	Canonical Clinical Problem Statement System
CCS2003	Clinical Classifications Software (CCS)
COSTAR_89-95	Computer-Stored Ambulatory Records (COSTAR)
CPM2003	Columbia Presbyterian Medical Center Medical Entities Dictionary
CST95	Coding Symbols for Thesaurus of Adverse Reaction Terms (COSTART)
DSM4_1994	Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)
ICPC etc.	The International Classification of Primary Care
MDR71	Medical Dictionary for Regulatory Activities Terminology (MedDRA)
WHO97 etc.	WHO Adverse Drug Reaction Terminology (WHOART)

Drugs (note: MSH2002 is also a comprehensive source of drug terminology)	
MDDDB_2003_03	Master Drug Data Base (MDDDB)
MMSL_2004_03	Multum MediSource Lexicon
MMX01	Micromedex DRUGDEX
MTHFDA_2004_01	FDA National Drug Code Directory
HIPAA	
CHI	
NDDF_2004_03_11	National Drug Data File
RXNORM_05Aa	RxNorm
CHI	
VANDF03	VA National Drug File
Medical devices	
SPN2003	Standard Product Nomenclature (USFDA)
UMD2005	Universal Medical Device Nomenclature System: Product Category Thesaurus
Nursing	
PCDS97	Patient Care Data Set (PCDS) [from Vanderbilt University School of

# Medical Vocabularies -UMLS Grouping (3)

## □ Indexing or synthesizing knowledge-based information

<b>"Comprehensive" vocabularies</b>	
CSP2004	Computer Retrieval of Information on Scientific Projects (CRISP)
LCH90	Library of Congress Subject Headings
MSH2005	Medical Subject Headings
<b>Diseases</b>	
AIR93	AI/RHEUM
DDB00	Diseases Database 2000
DXP94	DXplain (expert diagnosis program)
JABL99	Online Congenital Multiple Anomaly/Mental Retardation Syndromes
MIM93	Online Mendelian Inheritance in Man (OMIM)
NCI2004	NCI Thesaurus
PDQ2004	Physician Data Query Online System (PDQ)
QMR96	Quick Medical Reference (QMR)
RAM99	QMR Clinically Related Terms
<b>Anatomy</b>	
NEU99	Neuronames Brain Hierarchy
UWDA173	University of Washington Digital Anatomist
<b>Consumer Health</b>	
MEDLINEPLUS_20040814	MedlinePlus Health Topics
<b>Endoscopy</b>	
MTHMST etc	Minimal Standard Terminology Digestive Endoscopy

<b>Gene names</b>	
GO2004_03_02	Gene Ontology (GO): tool for the unification of biology
HUGO_2004_04	Human Gene Nomenclature (HUGO)
CHI	
NCBI2004	NCBI Taxonomy
<b>Substance abuse and addiction</b>	
AOD2000	Alcohol and Other Drug Thesaurus: A Guide to Concepts and Terminology in Substance Abuse and Addiction
<b>Psychology</b>	
PSY2001	Thesaurus of Psychological Index Terms
<b>Research methodology</b>	
MCM92	Glossary of Methodologic Terms for Clinical Epidemiologic Studies of Human Disorders
<b>Miscellaneous</b>	
HL7_1998-2002	Health Level Seven Vocabulary (HL7)
CHI	